



# Amphibians and reptiles of the state of Hidalgo, Mexico

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**Abstract:** We compiled a checklist of the amphibians and reptiles of the state of Hidalgo, Mexico. The herpetofauna of Hidalgo consists of a total of 175 species: 54 amphibians (14 salamanders and 40 anurans); and 121 reptiles (one crocodile, five turtles, 36 lizards, 79 snakes). These taxa represent 32 families (12 amphibian families, 20 reptile families) and 87 genera (24 amphibian genera, 63 reptile genera). Two of these species are non-native species (*Hemidactylus frenatus* Duméril and Bibron, 1836 and *Indotyphlops braminus* (Daudin, 1803)). This herpetofauna represents a mixture of species from both the Sierra Madre Oriental and the Transvolcanic Belt. In addition, 26% of all categorized amphibian and reptile species in Hidalgo are considered Vulnerable, Near Threatened, Endangered, or Critically Endangered by the IUCN Red List. Thus, Hidalgo represents a relatively unique and threatened diversity of amphibians and reptiles.

**Key words:** amphibians, reptiles, Hidalgo, Mexico

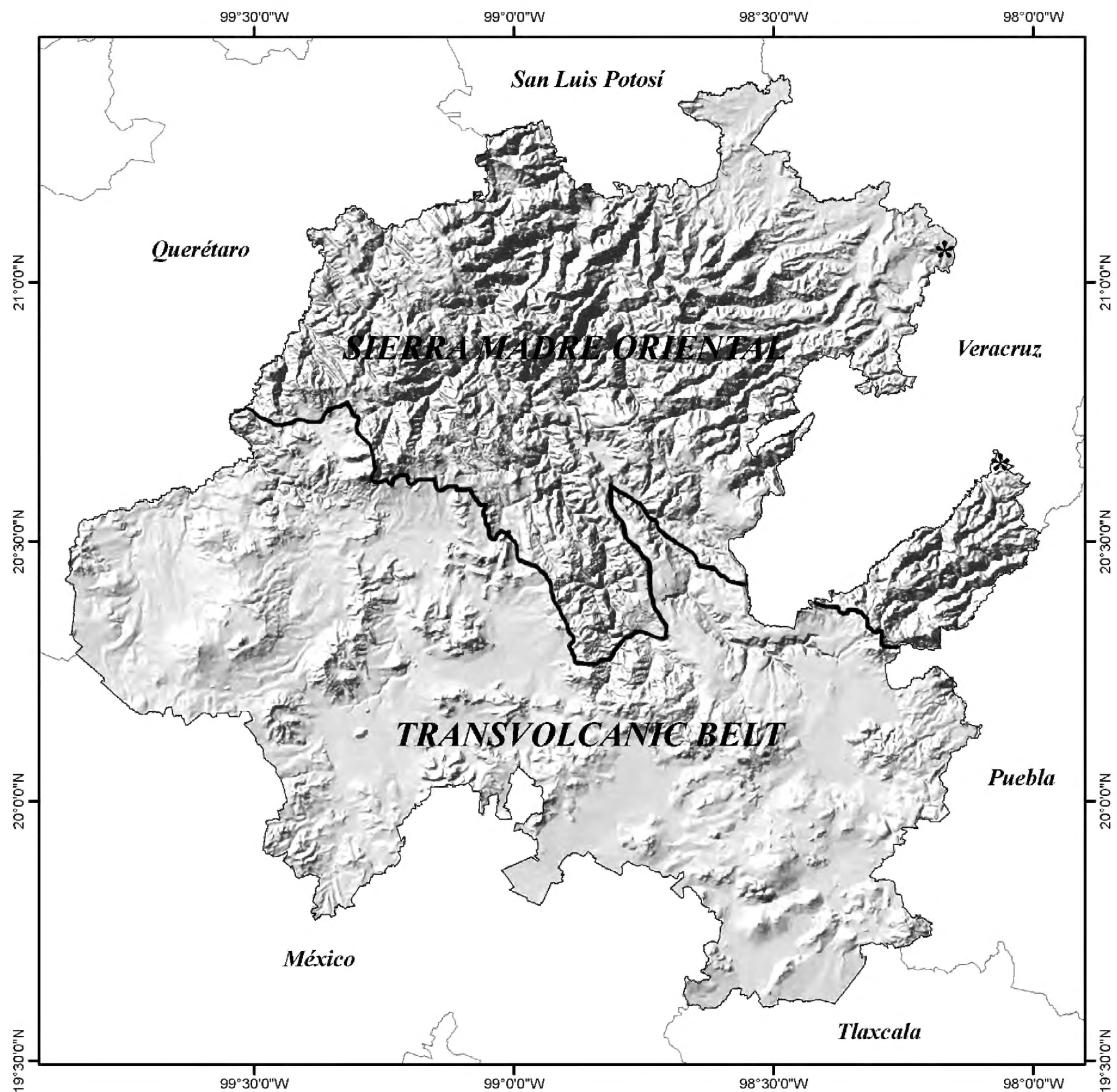
## INTRODUCTION

Hidalgo is one of the smallest states in Mexico; ranking 26<sup>th</sup> out of 31 states, with a surface area of 20,905 km<sup>2</sup>, which represents 1.1% of the surface area of the country. The topography of Hidalgo is very rugged, its lowest point is a few meters above sea level and its highest point is over 3,300 m above sea level. Parts of three physiographic provinces are found in the state: the Sierra Madre Oriental; the Transvolcanic Belt; and the North Gulf Coastal Plain.

Much of Hidalgo is subject to severe human pressures such as extraction of timber, agriculture, animal husbandry, and expansion of human settlements, so that more than 60% of the native vegetation has been transformed into some kind of anthropogenic habitat. Almost the entire southern half of the state (i.e., the area occupied by the Transvolcanic Belt province) has been modified by the establishment of agricultural

crops. At higher elevations in the provinces of Sierra Madre Oriental and the Transvolcanic Belt, there are conifer forests of pine (*Pinus* spp.), oak (*Quercus* spp.), and Mexican Fir (*Abies religiosa* (Kunth) Schlechtendahl and Chamisso, 1830), among other species. In the lower areas of these provinces is mountain cloud forest characterized by the most diverse vegetation type per unit area of the country (Rzedowski 1996). The cloud forest of the mountains on the outskirts of the village of La Mojonera is home to the most important *Fagus grandifolia* spp. *mexicana* (Martínez) forest in the country. *Fagus grandifolia* spp. *mexicana* (Martínez) is a relict taxon whose distribution in Mexico represents relictual areas worthy of greater attention in biogeographic and conservation studies (Alcántara-Ayala and Luna-Vega 2001). Such cloud forests in Mexico are also under threat from climate change (Ponce-Reyes et al. 2012).

The complex topography of Hidalgo, along with the climates and vegetation types present, has resulted in great faunal diversity that has caught the attention of biologists. In recent years there have been important contributions that have attempted to summarize and describe some groups of reptiles or the entire herpetofauna of Hidalgo (e.g., Bryson and Mendoza-Quijano 2007; Valencia-Hernández et al. 2007; Ramírez-Bautista et al. 2010, 2014), of specific areas, habitats or localities within Hidalgo (e.g., Fernandez-Badillo and Goyenechea Mayer-Goyenechea, 2010; Vite-Silva et al., 2010; Huitzel-Mendoza and Goyenechea Mayer-Goyenechea 2011; Cruz-Elizalde and Ramírez-Bautista 2012; Hernández-Salinas and Ramírez-Bautista 2013). Indeed, there appears to be a new interest in the herpetofauna of Hidalgo, as epitomized by several recent range extensions or rediscoveries of snakes (Roth-Monzon et al. 2011; Berriozabal-Islas et al. 2012; Ramírez-Bautista et al. 2013; Badillo-Saldaña et al. 2014; Lara-Tufino et al. 2014), salamanders (Badillo-Saldaña et al. 2015) and crocodilians (Mejenes-López and Hernández-Bautista 2013), and the description of a new species of lizard in the genus *Xenosaurus* (Woolrich-Piña



**Figure 1.** Topographical map of the state of Hidalgo, Mexico (CONABIO 2004). The \* refer to the locations of the North Gulf Coastal Plains within the state of Hidalgo.

and Smith 2012). Cruz-Elizalde et al. (2015) have also recently evaluated the effectiveness of protected areas in conserving the herpetofauna of Hidalgo.

The goal of this publication is to report on the list of the amphibians and reptiles known to occur in the state of Hidalgo. We hope that this publication will help to increase the knowledge of these two classes of tetrapods and encourage the development of future work on them in this small, but biologically important Mexican state, especially given the extensive conversion of Hidalgo's landscape to agricultural purposes.

## MATERIALS AND METHODS

### Study site

Hidalgo is located in the central part of Mexico, between latitudes 21°24' and 19°36' N and longitudes 097°58' and 099°53' W (Figure 1). To the north it is

bordered by Querétaro, San Luis Potosí, and Veracruz; to the south by Puebla, Tlaxcala, and México; to the east by Veracruz and Puebla; and, to the west, by México and Querétaro.

The province of the Sierra Madre Oriental in Hidalgo is represented by the subprovince of Carso Huasteco, so named for possessing features of a major karst topography (INEGI 2009). This province is divided by important rivers, such as Acoyoapa, Amajac, Atlapexco, and Candelaria, flowing through it. The highest elevations in this region exceed 2,000 m above sea level. This region is dominated by limestone. Within the state of Hidalgo, this province covers approximately 9,713 km<sup>2</sup> (46.46% of the state surface area) and occupies approximately the northern half of the state. In this portion of the Carso Huasteco, mountain ranges dominate. Its lowest areas are localized in the north and northeastern part of the



state and constitute the region known as Huasteca Hidalguense, where the topographical systems classified as “lying valley slopes” are common (INEGI 2009).

In Hidalgo, the Transvolcanic Belt province occupies a surface area of approximately 11,136 km<sup>2</sup> and represents 53.27% of the state’s surface area. It occupies slightly more than the southern half of the state and contains two subprovinces: 1) Coastal and Mountain Regions of Querétaro and Hidalgo. This subprovince runs from west to east as low hills of volcanic material, < 2,000 m elevation, which is essentially enclosed on all sides by a system of mountains, plateaus, and hills, almost all of which have a volcanic origin. Only one peak, the Nopala, has an altitude > 3,000 m; and 2) Lakes and Volcanoes of Anáhuac that enters the southern part of Hidalgo and occupies 15.86% of the state’s surface area (INEGI 2009).

The province of the North Gulf Coastal Plains covers approximately 56 km<sup>2</sup> of the surface area of Hidalgo (= 0.27%). It occupies a small portion of the northeastern corner of the state in parts of the municipalities of Huautla and Huehuetla (INEGI 2009).

### Data collection

We obtained the list of amphibians and reptiles of the state of Hidalgo from the following sources: (1) specimens from the Laboratorio de Ecología-UBIPRO (LEUBIPRO) collections; (2) databases from the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (National Commission for the Understanding and Use of Biodiversity; CONABIO), that were the results of various scientific projects undertaken by this institution in Hidalgo and includes museum records from the principal museum collections in Mexico and the United States which include the following 22 collections: Departamento de Zoología, Escuela Nacional de Ciencias Biológicas, I.P.N. (ENCB); Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution (USNM); Division of Amphibians and Reptiles, Field Museum of Natural History (FMNH); Fort Worth Museum of Science and History (FWMSH); Herpetology Department, American Museum of Natural History (AMNH); Herpetology Section, Natural History Museum of Los Angeles County (LACM); Monte Leaf Bean Life Science Museum, Brigham Young University (BYU); Museo de Zoología Alfonso L. Herrera, Facultad de Ciencias UNAM – MZFC-UNAM; Museum of Comparative Zoology, Harvard University, Cambridge (MCZ-HU); Museum of Michigan State University (MSU); Museum of Natural History, Division of Herpetology, Kansas University (KU); Museum of Natural History, University of Illinois at Urbana-Champaign (UIMNH); Museum of Vertebrate Zoology, Division of Biological Sciences, University of California – Berkeley (MVZ-UCB); Museum of Zoology, Biological Sciences Division, Louisiana State University

(LSUMZ); Museum of Zoology, University of Michigan, Ann Arbor (UMMZ); Southern Illinois University Carbondale; Texas Cooperative Wildlife Collections, Texas A & M University (TCWC); University of Arizona (UA); University of Colorado Museum (UCM); University of Illinois Museum of Natural History (UIMNH); University of Texas at Arlington (UTA); (3) a thorough examination of the available literature on amphibians and reptiles in the state such as: Badillo-Saldaña et al. (2014); Berriozabal-Islas et al. (2012); Bryson and Mendoza-Quijano (2007); Goyenechea Mayer-Goyenechea (2003); Huitzil-Mendoza and Goyenechea Mayer-Goyenechea (2011); Lemos-Espinal and Dixon (forthcoming); Rabb (1958); Ramírez-Bautista et al. (2010); Roth-Monzon et al. (2011); Valencia-Hernández et al. (2007); Woodall (1941); and (4) our personal field work, primarily focused around the municipalities of Molango, San Agustín Metzquititlán, Tlanchinol, and Zacualtipán. We visited this region periodically from 2002 to 2014, taking notes on the amphibians and reptiles observed during visual encounter surveys. All relevant Mexican laws and regulations pertaining to observation and collection of reptiles and amphibians were followed during these surveys.

Species were included in the checklist only if we were able to confirm the record, either by direct observation or through documented museum records or vouchers in the state. Species with a questionable distribution in Hidalgo, or those that are mentioned in the literature without documented support of their presence in the state were not included in our list. In addition, we recorded the conservation status of each species based on three sources: 1) the IUCN Red List, 2) Environmental Viability Scores from Wilson et al. (2013a,b), and 3) listing in SEMARNAT (2010). For those neighboring states for which a recent checklist exists (México, Aguilar Miguel et al. 2009; Puebla, García-Vázquez et al. 2009; Querétaro, Dixon and Lemos-Espinal 2010; San Luis Potosí, Lemos-Espinal and Dixon 2013), we determined the number of overlapping species.

### RESULTS

The herpetofauna of Hidalgo consists of a total of 175 species (Tables 1 and 2): 54 amphibians (14 salamanders and 40 anurans); and 121 reptiles (one crocodile, five turtles, 36 lizards, 79 snakes). These taxa represent 32 families (12 amphibian families, 20 reptile families) and 87 genera (24 amphibian genera, 63 reptile genera). Two of these species are non-native species (*Hemidactylus frenatus* Duméril and Bibron, 1836 and *Indotyphlops braminus* (Daudin, 1803)).

Ninety-two of the 175 species that inhabit Hidalgo are endemic to Mexico, four of those 92 are endemic to Hidalgo, three salamanders and one lizard. Nineteen of the 92 endemics have a narrow distribution in

**Table 1.** Checklist of amphibians and reptiles of Hidalgo. We also provide the extent of global distribution (1 = Endemic to Hidalgo, 2 = Endemic to Mexico, 3 = Non-endemic shared with North America, 4 = Non-endemic shared with South America, 5 = Broad range shared with both North America and South America), IUCN Status (DD = Data Deficient; LC = Least Concern, V = Vulnerable, NT = Near Threatened; E = Endangered; CE = Critically Endangered), population trend (+ = Increasing, = = Stable, - = Decreasing, ? = Unknown) according to the IUCN Red List (The IUCN Red List of Threatened Species, Version 2014.2; www.iucnredlist.org; accessed 12-14 November 2014), and Environmental Vulnerability Score (EVS; the higher the score the greater the vulnerability) from Wilson et al. (2013a,b), and conservation status in Mexico according to SEMARNAT (2010) (P = in danger of extinction, A = threatened; Pr = subject to special protection, NL – not listed). Source denotes whether the species was observed in the field by the authors (A), documented in the CONABIO data base and/or museum collections (C/M), or found in the literature (citation of source).

	Global Distribution	IUCN Status	Population Trend	EVS Score	SEMARNAT listing	Source
<b>Class Amphibia</b>						
<b>Order Caudata</b>						
<b>Family Ambystomatidae</b>						
<i>Ambystoma velasci</i> (Dugès, 1888)	2	LC	?	10	Pr	A
<b>Family Plethodontidae<sup>1</sup></b>						
<i>Bolitoglossa platydactyla</i> (Gray, 1831)	2	NT	-	15	Pr	C/M
<i>Chiropterotriton arboreus</i> (Taylor, 1941)	2	CE	-	18	Pr	C/M
<i>Chiropterotriton chiropterus</i> (Cope 1863)	2	CE	-	16	Pr	A
<i>Chiropterotriton chondrostegus</i> (Taylor, 1941)	2	E	-	17	Pr	C/M
<i>Chiropterotriton dimidiatus</i> (Taylor, 1939)	1	E	-	17	Pr	C/M
<i>Chiropterotriton mosaueri</i> (Woodall, 1941)	1	DD	?	18	Pr	Woodall (1941); Rabb (1958)
<i>Chiropterotriton multidentatus</i> (Taylor, 1938)	2	E	-	15	Pr	C/M
<i>Chiropterotriton terrestris</i> (Taylor, 1941)	1	CE	?	18	NL	Rabb (1958)
<i>Pseudoeurycea bellii</i> (Gray, 1850)	2	V	-	12	A	A
<i>Pseudoeurycea cephalica</i> (Cope, 1889)	2	NT	-	14	A	A
<i>Pseudoeurycea gigantea</i> (Taylor, 1939)	2	CE	-	16	NL	Badillo-Saldaña et al. (2015)
<i>Pseudoeurycea leprosa</i> (Cope, 1869)	2	V	-	16	A	A
<b>Family Salamandridae</b>						
<i>Notophthalmus meridionalis</i> (Cope, 1880)	3	E	-	12	P	Ramírez-Bautista et al. (2010)
<b>Order Anura</b>						
<b>Family Bufonidae</b>						
<i>Anaxyrus punctatus</i> Baird & Girard, 1852	3	LC	=	5	NL	A
<i>Incilius marmoreus</i> (Wiegmann, 1833)	2	LC	=	11	NL	A
<i>Incilius nebulifer</i> Girard, 1854	3	LC	=	6	NL	A
<i>Incilius occidentalis</i> Camerano, 1879	2	LC	=	11	NL	A
<i>Incilius valliceps</i> (Wiegmann, 1833)	4	LC	=	6	NL	A
<i>Rhinella marina</i> (Linnaeus, 1758)	5	LC	+	3	NL	A
<b>Family Craugastoridae</b>						
<i>Craugastor augusti</i> (Dugès, 1879)	3	LC	=	8	NL	C/M
<i>Craugastor berkenbuschii</i> (Peters, 1870)	2	NT	-	14	Pr	C/M
<i>Craugastor decoratus</i> (Taylor, 1942)	2	V	?	15	Pr	C/M
<i>Craugastor rhodopis</i> (Cope, 1867)	2	V	-	14	NL	C/M
<b>Family Eleutherodactylidae</b>						
<i>Eleutherodactylus cystignathoides</i> (Cope, 1878)	3	LC	=	12	NL	C/M
<i>Eleutherodactylus longipes</i> (Baird, 1869)	2	V	?	15	NL	C/M
<i>Eleutherodactylus nitidus</i> (Peters, 1870)	2	LC	=	12	NL	C/M
<i>Eleutherodactylus verrucipes</i> Cope, 1865	2	V	=	16	Pr	C/M
<b>Family Hylidae<sup>2</sup></b>						
<i>Charadrahyla taeniopus</i> (Günther, 1901)	2	V	-	13	A	C/M
<i>Ecnomiohyla miotympanum</i> Cope, 1863	2	NT	-	9	NL	C/M
<i>Hyla arenicolor</i> Cope, 1886	3	LC	=	7	NL	A
<i>Hyla euphorbiacea</i> Günther, 1859	2	NT	-	13	NL	Ramírez-Bautista et al. (2010)
<i>Hyla eximia</i> Baird, 1854	2	LC	=	10	NL	A
<i>Hyla plicata</i> Brocchi, 1877	2	LC	=	11	A	A
<i>Plectrohyla aborescandens</i> (Taylor, 1939)	2	E	-	11	Pr	C/M
<i>Plectrohyla bistincta</i> (Cope, 1877)	2	LC	-	9	Pr	Ramírez-Bautista et al. (2010)
<i>Plectrohyla charadricola</i> (Duellman, 1964)	2	E	-	14	A	C/M
<i>Plectrohyla robertsorum</i> (Taylor, 1940)	2	E	-	13	A	C/M
<i>Scinax staufferi</i> (Cope, 1865)	4	LC	=	4	NL	C/M
<i>Smilisca baudinii</i> (Duméril & Bibron, 1841)	4	LC	=	3	NL	A
<i>Tlalocohyla picta</i> (Günther, 1901)	4	LC	+	8	NL	A
<i>Trachycephalus typhonius</i> (Linnaeus, 1758)	4	LC	=	4	NL	C/M

Continued

Table 1. Continued.

	Global Distribution	IUCN Status	Population Trend	EVS Score	SEMARNAT listing	Source
<b>Family Leptodactylidae</b>						
<i>Leptodactylus fragilis</i> (Brocchi, 1877)	4	LC	=	5	NL	Ramírez-Bautista et al. (2010)
<i>Leptodactylus melanonotus</i> (Hallowell, 1861)	4	LC	=	6	NL	C/M
<b>Family Microhylidae</b>						
<i>Hypopachus variolosus</i> (Cope, 1866)	4	LC	=	4	NL	C/M
<b>Family Ranidae</b>						
<i>Lithobates berlandieri</i> (Baird, 1859)	3	LC	=	7	Pr	A
<i>Lithobates catesbeianus</i> (Shaw, 1802)	3	LC	+	10	NL	C/M
<i>Lithobates johni</i> (Blair, 1965)	2	E	-	14	P	Ramírez-Bautista et al. (2010)
<i>Lithobates montezumae</i> (Baird, 1854)	2	LC	-	13	Pr	C/M
<i>Lithobates neovolcanicus</i> (Hillis & Frost, 1985)	2	NT	-	13	A	C/M
<i>Lithobates spectabilis</i> (Hillis & Frost, 1985)	2	LC	-	12	NL	C/M
<b>Family Rhinophrynidae</b>						
<i>Rhinophrynus dorsalis</i> Duméril & Bribon, 1841	4	LC	=	8	Pr	C/M
<b>Family Scaphiopodidae</b>						
<i>Scaphiopus couchii</i> Baird, 1854	3	LC	=	3	NL	C/M
<i>Spea multiplicata</i> (Cope, 1863)	3	LC	=	6	NL	C/M
<b>Class Reptilia</b>						
<b>Order Crocodylia</b>						
<b>Family Crocodylidae</b>						
<i>Crocodylus moreletii</i> Duméril & Bibron, 1851	4	LC	=	13	Pr	Mejenes-López and Hernández-Bautista (2013)
<b>Order Testudines</b>						
<b>Family Emidydae</b>						
<i>Trachemys venusta</i> (Gray, 1855)	4	?	?	13	NL	Lemos-Espinal and Dixon (in press)
<b>Family Kinosternidae</b>						
<i>Kinosternon herrerai</i> (Stejneger, 1925)	2	NT	-	14	Pr	Lemos-Espinal and Dixon (in press)
<i>Kinosternon hirtipes</i> (Wagler, 1830)	3	LC	-	10	Pr	C/M
<i>Kinosternon integrum</i> Le Conte, 1854	2	LC	=	11	Pr	Lemos-Espinal and Dixon (in press)
<i>Kinosternon scorpioides</i> (Linnaeus, 1766)	4	? (LC)	?	10	Pr	C/M
<b>Order Squamata</b>						
<b>Suborder Lacertilia</b>						
<b>Family Anguidae</b>						
<i>Abronia taeniata</i> (Wiegmann, 1828)	2	V	-	15	Pr	A
<i>Barisia imbricata</i> (Wiegmann, 1828)	2	LC	?	14	Pr	A
<i>Gerrhonotus infernalis</i> Baird, 1859 <sup>3</sup>	3	LC	=	13	NL	A
<i>Gerrhonotus ophiurus</i> Cope, 1866 <sup>3</sup>	2	LC	?	12	NL	A
<b>Family Corytophanidae</b>						
<i>Basiliscus vittatus</i> Wiegmann, 1828	4	?	?	7	NL	C/M
<i>Laemactus serratus</i> Cope, 1864	4	LC	=	8	Pr	Ramírez-Bautista et al. (2010)
<b>Family Dactyloidea</b>						
<i>Anolis laevis</i> (Wiegmann, 1834)	4	?	?	9	NL	C/M
<i>Anolis lemurinus</i> Cope, 1861	4	?	?	8	NL	C/M
<i>Anolis naufragus</i> (Campbell, Hillis & Lamar, 1989)	1	V	-	13	Pr	C/M
<i>Anolis petersii</i> Bocourt, 1873	4	?	?	9	NL	Ramírez-Bautista et al. (2010)
<i>Anolis sericeus</i> Hallowell, 1856	4	?	?	8	NL	C/M
<b>Family Dibamidae</b>						
<i>Anelytropsis papillosus</i> Cope, 1885	2	LC	-	10	A	Lemos-Espinal and Dixon (in press)
<b>Family Geckonidae</b>						
<i>Hemidactylus frenatus</i> Duméril and Bibron, 1836	6	N/A	N/A	N/A	N/A	Lemos-Espinal and Dixon (in press)
<b>Family Iguanidae</b>						
<i>Ctenosaura acanthura</i> (Shaw, 1802)	2	?	?	12	Pr	Ramírez-Bautista et al. (2010)
<b>Family Phrynosomatidae</b>						
<i>Phrynosoma orbiculare</i> (Linnaeus, 1758)	2	LC	=	12	A	A
<i>Sceloporus aeneus</i> Wiegmann, 1828	2	LC	=	13	NL	A
<i>Sceloporus bicanthalis</i> Smith, 1937	2	LC	=	13	NL	A
<i>Sceloporus grammicus</i> Wiegmann, 1828	3	LC	=	9	Pr	A
<i>Sceloporus megalepidurus</i> Smith, 1934	2	V	-	14	Pr	C/M
<i>Sceloporus minor</i> Cope, 1885	2	LC	=	14	NL	A
<i>Sceloporus mucronatus</i> Cope, 1885	2	LC	=	13	NL	A

Continued

Table 1. Continued.

	Global Distribution	IUCN Status	Population Trend	EVS Score	SEMARNAT listing	Source
<i>Sceloporus parvus</i> Smith, 1934	2	LC	=	15	NL	A
<i>Sceloporus scalaris</i> Wiegmann, 1828	2	LC	=	12	NL	A
<i>Sceloporus serrifer</i> Cope, 1866	3	LC	=	6	NL	Ramírez-Bautista et al. (2010)
<i>Sceloporus spinosus</i> Wiegmann, 1828	2	LC	=	12	NL	A
<i>Sceloporus torquatus</i> Wiegmann, 1828	2	LC	=	11	NL	A
<i>Sceloporus variabilis</i> Wiegmann, 1834	4	LC	=	5	NL	A
<b>Family Scincidae</b>						
<i>Plestiodon lynxe</i> (Wiegmann, 1834)	2	LC	=	10	Pr	A
<i>Plestiodon tetragrammus</i> Baird, 1859	3	LC	=	12	NL	C/M
<i>Scincella gemmingeri</i> (Cope, 1864)	2	LC	=	11	Pr	C/M
<i>Scincella silvicola</i> (Taylor, 1937)	2	LC	=	12	A	C/M
<b>Family Teiidae</b>						
<i>Aspidoscelis gularis</i> (Baird & Girard, 1852)	3	LC	=	9	NL	C/M
<i>Holcosus undulatus</i> (Wiegmann, 1834)	4	LC	=	7	NL	C/M
<b>Family Xantusidae</b>						
<i>Lepidophyma gaigeae</i> Mosauer, 1936	2	V	-	13	Pr	C/M
<i>Lepidophyma sylvaticum</i> Taylor, 1939	2	LC	-	11	Pr	A
<b>Family Xenosauridae</b>						
<i>Xenosaurus tzacualtipantecus</i> Woolrich-Piña & Smith, 2012	2	?	?	17	NL	A
<b>Order Squamata</b>						
<b>Suborder Serpentes</b>						
<b>Family Boidae</b>						
<i>Boa constrictor</i> Linnaeus, 1758	4	?	?	10	A	Lemos-Espinal and Dixon (in press)
<b>Family Colubridae</b>						
<i>Adelphicos quadrivirgatum</i> Jan, 1862	4	LC	?	10	Pr	Lemos-Espinal and Dixon (in press)
<i>Amastridium sapperi</i> (Werner, 1903)	4	LC	=	10	NL	Lemos-Espinal and Dixon (in press)
<i>Chersodromus rubiventris</i> (Taylor, 1949)	2	E	-	14	Pr	Ramírez-Bautista, et al. (2013)
<i>Coluber constrictor</i> Linnaeus, 1758	4	LC	=	10	A	Ramírez-Bautista et al. (2010)
<i>Coniophanes fissidens</i> (Günther, 1858)	4	?	?	7	NL	Lemos-Espinal and Dixon (in press)
<i>Coniophanes imperialis</i> (Baird, 1859)	4	LC	=	8	NL	Lemos-Espinal and Dixon (in press)
<i>Coniophanes piceivittis</i> Cope, 1869	4	LC	=	7	NL	Lemos-Espinal and Dixon (in press)
<i>Conopsis lineata</i> (Kennicott, 1859) <sup>4</sup>	2	LC	=	13	NL	A
<i>Conopsis nasus</i> Günther, 1858 <sup>4</sup>	2	LC	=	11	NL	A
<i>Diadophis punctatus</i> (Linnaeus, 1766)	4	LC	=	4	NL	C/M
<i>Drymarchon melanurus</i> (Duméril, Bibron & Duméril, 1854)	4	LC	=	6	NL	C/M
<i>Drymobius chloroticus</i> (Cope, 1886)	4	LC	?	8	NL	Badillo-Saldaña et al. (2014)
<i>Drymobius margaritiferus</i> (Schlegel, 1837)	4	?	?	6	NL	C/M
<i>Ficimia hardyi</i> Mendoza-Quijano & Smith, 1993	2	E	-	13	NL	C/M
<i>Ficimia olivacea</i> Gray, 1849	2	?	?	9	NL	C/M
<i>Ficimia streckeri</i> Taylor, 1931	3	LC	=	12	NL	Lemos-Espinal and Dixon (in press)
<i>Geophis latifrontalis</i> Garman, 1883	2	DD	?	14	Pr	C/M
<i>Geophis multitorques</i> (Cope, 1885)	2	LC	=	13	Pr	C/M
<i>Hypsiglena jani</i> (Dugès, 1865)	3	?	?	6	NL	C/M
<i>Imantodes cenchoa</i> (Linnaeus, 1758)	4	?	?	6	Pr	C/M
<i>Imantodes gemmistratus</i> Cope, 1860	4	?	?	6	Pr	C/M
<i>Lampropeltis ruthveni</i> Blanchard, 1920 <sup>5</sup>	2	?	?	16	A	Roth-Monzón et al. (2011)
<i>Lampropeltis triangulum</i> (Lacépède, 1789) <sup>5</sup>	4	?	?	7	A	A
<i>Leptodeira maculata</i> (Hallowell, 1861)	2	LC	=	7	NL	C/M
<i>Leptodeira septentrionalis</i> (Kennicott, 1859)	4	?	?	8	NL	C/M
<i>Leptophis diplotropis</i> (Günther, 1872)	2	LC	=	14	A	Berriozabal-Islas et al. (2012)
<i>Leptophis mexicanus</i> Duméril & Bibron, 1854	4	LC	=	6	A	A
<i>Masticophis flagellum</i> (Shaw, 1802)	3	LC	=	8	A	A
<i>Masticophis mentovarius</i> (Duméril, Bibron & Duméril, 1854)	4	?	?	6	A	C/M
<i>Masticophis schotti</i> Baird & Girard, 1853	3	LC	=	13	NL	C/M
<i>Mastigodryas melanolomus</i> (Cope, 1868)	4	LC	=	6	NL	Lemos-Espinal and Dixon (in press)
<i>Nerodia rhombifer</i> (Hallowell, 1852)	3	LC	=	10	NL	C/M
<i>Ninia diademata</i> Baird & Girard, 1863	4	LC	=	9	NL	C/M

Continued



Table 1. Continued.

	Global Distribution	IUCN Status	Population Trend	EVS Score	SEMARNAT listing	Source
<i>Oxybelis aeneus</i> (Wagler, 1824)	4	?	?	5	NL	Lemos-Espinal and Dixon (in press)
<i>Pantherophis emoryi</i> (Baird & Girard, 1853)	3	LC	=	13	NL	Lemos-Espinal and Dixon (in press)
<i>Pituophis deppei</i> (Duméril, 1853)	2	LC	=	14	A	C/M
<i>Pliocercus elapoides</i> Cope, 1860	4	LC	=	10	NL	C/M
<i>Rhadinaea decorata</i> (Günther, 1858)	4	?	?	9	NL	C/M
<i>Rhadinaea gaigeae</i> Bailey, 1937	2	DD	?	12	NL	C/M
<i>Rhadinaea hesperia</i> Bailey, 1940	2	LC	=	10	Pr	Lemos-Espinal and Dixon (in press)
<i>Rhadinaea marcellae</i> Taylor, 1949	2	E	-	12	Pr	C/M
<i>Salvadora bairdi</i> Jan, 1860	2	LC	=	15	Pr	C/M
<i>Salvadora grahamiae</i> Baird & Girard, 1853	3	LC	=	10	NL	C/M
<i>Scaphiodontophis annulatus</i> (Duméril, Bibron & Duméril, 1854)	4	LC	=	11	NL	C/M
<i>Senticolis triaspis</i> (Cope, 1866)	4	LC	=	6	NL	C/M
<i>Spilotes pullatus</i> (Linnaeus, 1758)	4	?	?	6	NL	C/M
<i>Storeria dekayi</i> (Holbrook, 1839)	4	LC	=	7	NL	C/M
<i>Storeria hidalgoensis</i> Taylor, 1942	2	V	-	13	NL	C/M
<i>Storeria storerioides</i> (Cope, 1866)	2	LC	=	11	NL	A
<i>Tantilla rubra</i> Cope, 1876	4	LC	?	5	Pr	C/M
<i>Thamnophis cyrtopsis</i> (Kennicott, 1860)	4	LC	=	7	A	C/M
<i>Thamnophis eques</i> (Reuss, 1834)	3	LC	=	8	A	A
<i>Thamnophis marcianus</i> (Baird & Girard, 1853)	4	LC	?	10	A	Ramírez-Bautista et al. (2010)
<i>Thamnophis melanogaster</i> (Wiegmann, 1830)	2	E	-	15	A	A
<i>Thamnophis proximus</i> (Say, 1823)	4	LC	=	7	A	C/M
<i>Thamnophis scalaris</i> Cope, 1861	2	LC	=	14	A	C/M
<i>Thamnophis scaliger</i> (Jan, 1863)	2	V	-	15	A	C/M
<i>Thamnophis sumichrasti</i> (Cope, 1866)	2	LC	?	15	A	A
<i>Trimorphodon tau</i> Cope, 1870	2	LC	?	13	NL	C/M
<i>Tropidodipsas sartorii</i> Cope, 1863	4	LC	=	9	Pr	C/M
<b>Family Elapidae</b>						
<i>Micrurus bernadi</i> (Cope, 1887)	2	LC	=	15	NL	Lemos-Espinal and Dixon (in press)
<i>Micrurus tener</i> Baird & Girard, 1853	3	LC	=	11	NL	Lemos-Espinal and Dixon (in press)
<b>Family Leptotyphlopidae</b>						
<i>Epictia goudotii</i> (Duméril & Bibron, 1844)	4	?	?	3	NL	Ramírez-Bautista et al. (2010)
<i>Rena dulcis</i> Baird & Girard, 1853	3	LC	?	13	NL	C/M
<i>Rena myopica</i> (Garman, 1884)	2	LC	=	13	NL	C/M
<b>Family Typhlopidae</b>						
<i>Indotyphlops braminus</i> (Daudin, 1803)	6	N/A	N/A	N/A	N/A	Ramírez-Bautista et al. (2010)
<b>Family Viperidae</b>						
<i>Agkistrodon taylori</i> Burger & Robertson, 1951	4	LC	?	17	A	Bryson and Mendoza-Quijano (2007)
<i>Atropoides nummifer</i> (Rüppell, 1845)	2	LC	=	13	A	C/M
<i>Bothrops asper</i> (Garman, 1883)	4	?	?	12	NL	C/M
<i>Crotalus aquilus</i> Klauber, 1952	2	LC	-	16	Pr	A
<i>Crotalus atrox</i> Baird & Girard, 1853	3	LC	=	9	Pr	Valencia-Hernández et al. (2007)
<i>Crotalus intermedius</i> Troschel, 1865	2	LC	=	15	A	Valencia-Hernández et al. (2007)
<i>Crotalus molossus</i> Baird & Girard, 1853	3	LC	=	8	Pr	C/M
<i>Crotalus ravus</i> Cope, 1865	2	LC	=	14	A	A
<i>Crotalus scutulatus</i> (Kennicott, 1861)	3	LC	=	11	Pr	Valencia-Hernández et al. (2007)
<i>Crotalus totonacus</i> Gloyd & Kauffeld, 1940	2	?	?	17	NL	C/M
<i>Crotalus triseriatus</i> (Wagler, 1830)	2	LC	=	16	NL	A
<i>Ophryacus undulatus</i> (Jan, 1859)	2	V	-	15	Pr	A

<sup>1</sup> We regard the presence of *Pseudoeurycea altamontana* (Taylor, 1939) as unlikely in El Chico, Hidalgo, and as limited to the Distrito Federal and Morelos.

<sup>2</sup> We regard the presence of *Bromeliodryas dendroscarta* (Taylor, 1940) as likely in the state of Hidalgo; however, at this time we regard this species as a species not occurring in this state until a voucher specimen is available.

<sup>3</sup> All *Gerrhonotus* populations in Hidalgo are either *G. infernalis* Baird, 1859 or *G. ophiurus* Cope, 1866. We follow Good (1994) in the distribution of the *G. liocephalus* Wiegmann, 1828 complex. *Gerrhonotus liocephalus* Wiegmann, 1828 is limited to areas in Puebla and Veracruz and south to these states along the Atlantic slope, with a disjunct population in Jalisco and Aguascalientes.

<sup>4</sup> We regard the only available record for *Conopsis biserialis* Taylor & Smith, 1942 (5 km SE of Pachuca) as an error that has been reported through the years (I. Goyenechea, pers. comm.) We have been recording snakes of this genus in Hidalgo and have never encountered a single specimen of *C. biserialis*.

<sup>5</sup> We regard the record of *Lampropeltis mexicana* (Garman, 1884) reported in Ramírez-Bautista et al. (2010) as a misinterpretation of Bryson et al. (2007), who did not mention the presence of *L. mexicana* in Hidalgo (confirmed by R.W. Bryson, pers. comm.).

east-central Mexico (from southern San Luis Potosí to northern Puebla and western Veracruz): two salamanders (*Chiropterotriton arboreus* (Taylor, 1941), *Pseudoeurycea gigantea* (Taylor, 1939)), five anurans (*Charadrahyla taeniopus* (Günther, 1901), *Hyla euphorbiacea* Günther, 1859), *Plectrohyla charadricola* (Duellman, 1964), *P. robertorum* (Taylor, 1940), *Lithobates johni* (Blair, 1965)), five lizards (*Sceloporus bicanthalis* Smith, 1937, *S. megalepidurus* Smith, 1934, *Scincella gemmingeri* (Cope, 1864), *Lepidophyma gaigeae* Mosauer, 1936, *Xenosaurus*

*tzacualtipantecus* Woolrich-Piña and Smith, 2012), and 6 snakes (*Chersodromus rubiventris* (Taylor, 1949), *Ficimia hardyi* Mendoza-Quijano and Smith, 1993, *Geophis latifrontalis* Garman, 1883, *Rhadinea marcellae* Taylor, 1949, *Thamnophis sumichrasti* (Cope, 1866), *Micrurus bernardi* (Cope, 1887), *Atropoides nummifer* (Rüppel, 1845)).

Four of the 92 endemics are distributed in the Transvolcanic Belt of central Mexico and part of the Sierra Madre Oriental: two salamanders (*Chiropterotriton chiropterus* (Cope, 1863) and *Pseudoeurycea leprosa* (Cope,

**Table 2.** Summary of species present in Hidalgo by family, order or suborder, and class. Distribution summary indicates the number of species for each taxon found in each distribution category in the order 1,2,3,4,5,6 (see Table 1 for details of each range). Status summary indicates the number of species found in each IUCN conservation status in the order DD, LC, V, NT, E, CE (see Table 1 for abbreviations; in some cases species have not been assigned a status by the IUCN and therefore these may not add up to the total number of species in a taxon). Trend summary indicates the number of species having each population trend (according to the IUCN Red List) in the order negative, stable, positive, unknown. Mean EVS is the mean Environmental Vulnerability Score, scores  $\geq 14$  are considered high vulnerability (Wilson et al., 2013a,b) and conservation status in Mexico according to SEMARNAT (2010) in the order NL, Pr, A, P (see Table 1 for abbreviations).

Class	Order/ Suborder	Family	Genera	Species	Distribution Summary	Status Summary	Trend Summary	Mean EVS	SEMARNAT	
Amphibia	Caudata		5	14	3,10,1,0,0,0	1,1,2,2,4,4	11,0,0,3	15.3	2,8,3,2	
		Ambystomatidae	1	1	0,1,0,0,0,0	0,1,0,0,0,0	0,0,0,1	10	0,1,0,0	
		Plethodontidae	3	12	3,9,0,0,0,0	1,0,2,2,3,4	10,0,0,2	16	2,7,3,1	
		Salamandridae	1	1	0,0,1,0,0,0	0,0,0,0,1,0	1,0,0,0	12	0,0,0,1	
	Anura		19	40	0,21,9,9,1,0	0,27,5,4,4,0	13,22,3,2	9.4	26,8,5,1	
		Bufonidae	3	6	0,2,2,1,1,0	0,6,0,0,0,0	0,5,1,0	7	6,0,0,0	
		Craugastoridae	1	4	0,3,1,0,0,0	0,1,2,1,0,0	2,1,0,1	12.8	2,2,0,0	
		Eleutherodactylidae	1	4	0,3,1,0,0,0	0,2,2,0,0,0	0,3,0,1	13.8	3,1,0,0	
		Hylidae	8	14	0,9,1,4,0,0	0,8,1,2,3,0	7,6,1,0	9.2	8,2,4,0	
		Leptodactylidae	1	2	0,0,0,2,0,0	0,2,0,0,0,0	0,2,0,0	5.5	2,0,0,0	
		Microhylidae	1	1	0,0,0,1,0,0	0,1,0,0,0,0	0,1,0,0	4	1,0,0,0	
		Ranidae	1	6	0,4,2,0,0,0	0,4,0,1,1,0	4,1,1,0	11.5	2,2,1,1	
		Rhynophrynidae	1	1	0,0,0,1,0,0	0,1,0,0,0,0	0,1,0,0	8	0,1,0,0	
		Scaphiopodidae	2	2	0,0,2,0,0,0	0,2,0,0,0,0	0,2,0,0	4.5	2,0,0,0	
		SUBTOTAL		24	54	3,31,10,9,1,1	1,27,7,6,8,4	24,22,2,5	11	28,16,8,3
Reptilia	Crocodylia		1	1	0,0,0,1,0,0	0,1,0,0,0,0	0,1,0,0	13	0,1,0,0	
		Crocodylidae	1	1	0,0,0,1,0,0	0,1,0,0,0,0	0,1,0,0	13	0,1,0,0	
	Testudines		2	5	0,2,1,2,0,0	0,3,0,1,0,0	2,1,0,2	11.6	1,4,0,0	
		Emydidae	1	1	0,0,0,1,0,0	--	0,0,0,1	13	1,0,0,0	
		Kinosternidae	1	4	0,2,1,1,0,0	0,3,0,1,0,0	2,1,0,1	11.2	0,4,0,0	
	Squamata		60	115	9,52,18,43,0,2	2,76,7,0,4,2	14,63,0,36	10.6	62,27,24,0	
		Lacertilia		17	36	1,21,5,8,0,1	0,24,4,0,0,2	6,20,0,9	11.1	21,11,3,0
	Anguidae		3	4	0,3,1,0,0,0	0,3,1,0,0,0	1,1,0,2	13.5	2,2,0,0	
	Corytophanidae		2	2	0,0,0,2,0,0	0,1,0,0,0,0	0,1,0,1	7.5	1,1,0,0	
	Dactyloidae		1	5	1,0,0,4,0,0	0,0,1,0,0,0	1,0,0,4	9.4	4,1,0,0	
	Dibamidae		1	1	0,1,0,0,0,0	0,1,0,0,0,0	1,0,0,0	10	0,0,1,0	
	Gekkonidae		1	1	0,0,0,0,0,1	--	--	--	--	
	Iguanidae		1	1	0,1,0,0,0,0	0,19,2,0,0,2	0,0,0,1	12	0,1,0,0	
	Phrynosomatidae		2	13	0,10,2,1,0,0	0,12,1,0,0,0	1,12,0,0	11.5	10,2,1,0	
	Scincidae		2	4	0,3,1,0,0,0	0,4,0,0,0,0	0,4,0,0	12	1,2,1,0	
	Teiidae		2	2	0,0,1,1,0,0	0,2,0,0,0,0	0,2,0,0	8	2,0,0,0	
	Xantusidae		1	2	0,2,0,0,0,0	0,1,1,0,0,0	2,0,0,0	12	0,2,0,0	
	Xenosauridae		1	1	0,1,0,0,0,0	--	0,0,0,1	17	1,0,0,0	
	Serpentes			43	79	8,31,13,34,0,1	2,52,3,0,4,0	8,43,0,27	10.4	41,16,21,0
			Boidae	1	1	0,0,0,1,0,0	--	0,0,0,1	10	0,0,1,0
		Colubridae	33	60	0,12,8,30,0,0	2,39,2,0,1,0	6,33,0,21	9.8	33,11,16,0	
		Elapidae	1	2	0,1,1,0,0,0	0,2,0,0,0,0	0,2,0,0	13	2,0,0,0	
		Leptotyphlopidae	2	3	0,1,1,1,0,0	0,2,0,0,0,0	0,1,0,2	9.7	3,0,0,0	
		Typhlopidae	1	1	0,0,0,0,0,1	--	--	--	--	
		Viperidae	5	12	0,7,3,2,0,0	0,9,1,0,0,0	2,7,0,3	13.6	3,5,4,0	
		SUBTOTAL		63	121	1,54,19,45,0,2	2,80,7,1,4,2	16,65,0,38	10.7	63,32,24,0
TOTAL		87	175	4,85,29,54,1,3	3,107,14,7,12,6	40,87,2,43		91,48,32,3		



1969)), one anuran (*Hyla plicata* Brocchi, 1877), and one lizard (*Sceloporus mucronatus* Cope, 1885). Another 30 of the 92 endemic species have a wide distribution in eastern Mexico, ranging from states north of Hidalgo such as Tamaulipas or San Luis Potosí to states south of Hidalgo such as Oaxaca or Chiapas, these species include four salamanders (*Bolitoglossa platydactyla* (Gray, 1831), *Chiropterotriton chondrostegus* (Taylor, 1941), *C. multidentatus* (Taylor, 1938), and *Pseudoeurycea cephalica* (Cope, 1889)); seven anurans (*Craugastor berkenbuschii* (Peters, 1870), *C. decoratus* (Taylor, 1942), *C. rhodophis* (Cope, 1867), *Eleutherodactylus longipes* (Baird, 1869), *E. verrucipes* Cope, 1865, *Ecnomihyla miotympanum* Cope, 1863, and *Plectrohyla aborescendens* (Taylor, 1939)); one turtle (*Kinosternon herrerae* (Stejnegeri, 1925)); eleven lizards (*Abronia taeniata* (Wiegmann, 1828), *Gerrhonotus ophiurus* (Taylor, 1939), *Anolis sericeus* Hallowell, 1856, *Anelytropsis papillosus* Cope, 1885, *Ctenosaura acanthura* (Shaw, 1802), *Sceloporus bicanthalis* Smith, 1937, *S. minor* Cope, 1885, *S. parvus* Smith, 1934, *Plestiodon lynxe* (Wiegmann, 1834), *Scincella silvicola* (Taylor, 1937), and *Lepidophyma sylvaticum* Taylor, 1939); and seven snakes (*Ficimia olivacea* Gray, 1849, *Geophis multitorques* (Cope, 1885), *Rhadinaea gaigeae* Bailey, 1937, *Storeria hidalgoensis* Taylor, 1942, *Rena myopica* (Garman, 1884), *Agkistrodon taylori* Burger & Robertson, 1951, and *Crotalus totonacus* Gloyd & Kauffeld, 1940).

Five more of the endemic species are distributed mainly in the Mexican Plateau and parts of the Transvolcanic Belt: one salamander (*Ambystoma velasci* (Dugès, 1888)), one anuran (*Lithobates neovolcanicus* (Hillis & Frost, 1985)), two lizards (*Sceloporus spinosus* Wiegmann, 1828 and *S. torquatus* Wiegmann, 1828), and one snake (*Lampropeltis ruthveni* Blanchard, 1920).

Fourteen more of the species endemic to Mexico that are found in Hidalgo have a peculiar distribution occupying the Sierra Madre Occidental as well as the Sierra Madre Oriental and parts of either the Mexican Plateau or the Transvolcanic Belt. They consist of one salamander (*Pseudoeurycea bellii* (Gray, 1850)), three anurans (*Incilius marmoreus* (Wiegmann, 1833), *Eleutherodactylus nitidus* (Peters, 1870) and *Plectrohyla bistincta* (Cope, 1877)), two lizards (*Phrynosoma orbiculare* (Linnaeus, 1758) and *Sceloporus scalaris* Wiegmann, 1828), and eight snakes (*Leptodeira maculate* (Hallowell, 1861), *Leptophis diplotropis* (Günther, 1872), *Pituophis deppei* (Duméril, 1853), *Rhadinaea hesperia* Wiegmann, 1828, *Storeria storerioides* (Cope, 1866), *Thamnophis melanogaster* (Wiegmann, 1830), *Trimorphodon tau* Cope, 1870, and *Crotalus aquilus* Klauber, 1952). Five more of the endemic species (two frogs, *Hyla eximia* Baird, 1854 and *Incilius occidentalis* Camerano, 1879; one turtle, *Kinosternon integrum* Le Conte, 1854; two snakes, *Conopsis nasus* Günther, 1858 and *Salvadora bairdi* Jan, 1860) are found in parts of the Sierra Madre Occidental as

well as in the Mexican Plateau and/or the Transvolcanic Belt. Eight other endemic species are typically found in the Transvolcanic Belt and parts of the Mexican Plateau or the Sierra Madre Oriental: two frogs (*Lithobates montezumae* (Baird, 1854 and *L. spectabilis* (Hillis & Frost, 1985)), two lizards (*Barisia imbricata* (Wiegmann, 1828) and *Sceloporus aeneus* Wiegmann, 1828), and four snakes (*Conopsis lineata* (Kennicott, 1859), *Thamnophis scalaris* Cope, 1861, *T. scaliger* (Jan, 1863), and *Crotalus triseriatus* (Wagler, 1830)). Three pit vipers (*Crotalus intermedius* Troschel, 1865, *C. ravus* Cope, 1865, and *Ophryacus undulatus* (Jan, 1859)) from Hidalgo that are endemic to Mexico have disjunct distributions with populations in Guerrero, Hidalgo, Oaxaca, and Veracruz.

The other 83 of the 175 species that inhabit Hidalgo have distributions that extend beyond Mexico. Twenty-nine of these 83 species are distributed from Canada or the United States and have their southernmost distribution in central or southern Mexico. These species consist of one salamander, nine anurans, one turtle, four lizards, and 14 snakes.

Thirty-three of the 83 non-endemic species reach their northernmost distribution in Mexico and their southernmost distribution in Central America or South America, including four anurans, one crocodile, two turtles, six lizards, and 20 snakes.

Another 19 species found in Hidalgo have a wide distribution that ranges from Canada or the United States to Central America or South America. These taxa represent five anurans, two lizards, and 12 snakes. Two species that inhabit Hidalgo are not native to the Western Hemisphere: one lizard introduced from southeastern Asia (*Hemidactylus frenatus* Duméril and Bibron, 1836), and one snake introduced from southern Asia (*Indotyphlops braminus* (Daudin, 1803)).

When comparing the species list of Hidalgo with those of neighboring states for which recent checklists are available, we found substantial overlap of species. Hidalgo and Puebla share 118 total species (40 amphibians and 78 reptiles), representing 48.2% of the total species, 49.4% of the amphibians, and 47.6% of the reptiles found in Puebla. There were 65 total species shared between Hidalgo and México, with 21 amphibian species and 44 reptile species shared. These represent 45.4%, 42%, and 47.3% of the total species, amphibian species, and reptile species of México, respectively. San Luis Potosí and Hidalgo share 132 total species, or 72.9% of the species found in San Luis Potosí. These two states share 36 species of amphibians and 96 species of reptiles, which represent 85.7% and 69.1% of the amphibian and reptile species found in San Luis Potosí, respectively. Querétaro shares 101 total species, 24 amphibian species and 77 reptile species with Hidalgo. These represent high percentages of the species found in Querétaro (86.3% total species, 82.8% amphibian species, 87.5% reptile species).

Twelve percent of all categorized herpetofaunal species in Hidalgo are either Critically Endangered or Endangered, and 26.2% are categorized as Vulnerable, Near Threatened, Endangered, or Critically Endangered by the IUCN. Using the EVS of Wilson et al. (2013a, b), 24.8% (43 of 173) were placed in the high vulnerability category ( $EVS \geq 14$ ). According to the SEMARNAT (2010) list, 1.7% of Hidalgo's species are in danger of extinction (P), 18.4% are threatened (A), 27.6% are subject to special protection (Pr), and 52.3% are not listed. In addition, of those species for which population trends were described, 31% had declining populations according to the IUCN Red List.

## DISCUSSION

The list of species of amphibians and reptiles we have generated for Hidalgo demonstrates the potential importance of this small state for the Mexican herpetofauna. More than half of the species of amphibians and reptiles found in Hidalgo are endemic to Mexico, including four that are endemic to Hidalgo. Several of these endemics have a relatively narrow distribution in Mexico; thus, Hidalgo represents an important component of their range. Our compilation of the conservation status and population trends of its herpetofauna also confirms that Hidalgo is of potential importance for several taxa. For example, 12 salamanders in the family Plethodontidae occur in Hidalgo, of which 3 are endemic to Hidalgo and the other 9 are endemic to Mexico. Four of the 12 species are listed as Critically Endangered and 3 are listed as Endangered by the IUCN (see Tables 1, 2). One of the 3 Hidalgo endemic species are listed as Critically Endangered, one as Endangered, and one as Data Deficient by the IUCN. All but one of the Plethodontidae has an EVS that places them in the high vulnerability category (Table 1; Wilson et al. 2013a). Three are listed as threatened (A) and one as in danger of extinction (P) in SEMARNAT (2010). In addition, ten of the plethodontid species have a negative population trend (the remaining 2 have unknown trends). Although the salamanders in the family Plethodontidae are in particular danger, as they are elsewhere in Mexico (see Frías-Alvarez et al. 2010; Wilson et al. 2013a), Hidalgo is home to several other Endangered and Critically Endangered species (see Tables 1, 2). The herpetofauna of Hidalgo therefore includes many species of conservation concern, with taxa of particular concern (based on IUCN listing and EVS) including Plethodontidae, Eleutherodactylidae, Crocodylia, Emydidae, Anguinae, Xenosauridae, Elapidae, and Viperidae (see Table 2). Our compilation also found many species for which no IUCN or SEMARNAT (2010) classification were given and many other species (43 of the 173 native species; 24.8%) had no information on population trends. However, all of these species have received EVS scores from

Wilson et al. (2013a, b). It is therefore critical that the herpetofauna of Hidalgo be studied further to establish population status and trends.

Hidalgo also appears to represent a “mixing-pot” for species whose distributions are from the Sierra Madre Occidental and the Transvolcanic Belt, as is evidenced by the overlap in species found in neighboring states, especially Querétaro and San Luis Potosí. Unfortunately, much of Hidalgo has been or is being converted to human-dominated or human-altered habitats. We hope that this checklist, along with other recent works describing and studying the herpetofauna of Hidalgo (see Introduction), will help highlight the diversity of reptiles and amphibians that can be found in this small but biologically important Mexican state.

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